

**Q1. WACP to check whether a number is odd or even (using simple if statement).**

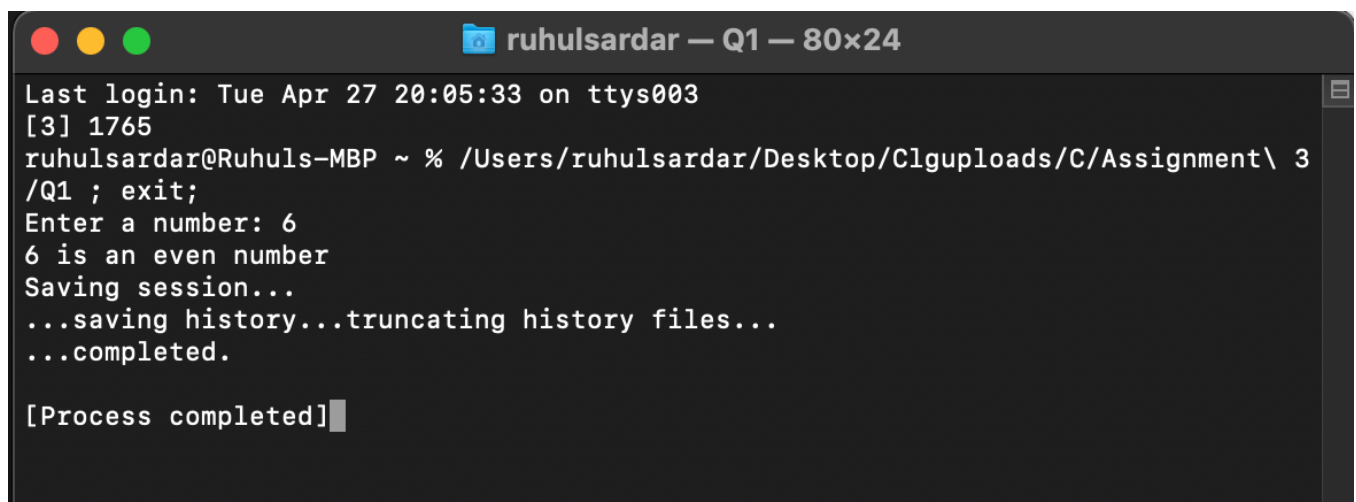
```
#include <stdio.h>

int main(){
int x;
printf("Enter a number: ");
scanf("%d", &x);

if (x % 2 == 0)
printf("%d is an even number", x);
else
printf("%d is an odd number", x);

return 0;
}
```

**Output:**

A terminal window titled "ruhulsardar — Q1 — 80x24" with standard macOS window controls (red, yellow, green buttons). The terminal shows the following text: "Last login: Tue Apr 27 20:05:33 on ttys003", "[3] 1765", "ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3 /Q1 ; exit;", "Enter a number: 6", "6 is an even number", "Saving session...", "...saving history...truncating history files...", "...completed.", and "[Process completed]".

```
ruhulsardar — Q1 — 80x24
Last login: Tue Apr 27 20:05:33 on ttys003
[3] 1765
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3
/Q1 ; exit;
Enter a number: 6
6 is an even number
Saving session...
...saving history...truncating history files...
...completed.

[Process completed]
```

## Q2. WACP to find the roots of a Quadratic equation (using if else statement)

```
#include <math.h>
#include <stdio.h>
int main() {
    double a, b, c, discriminant, root1, root2, realPart, imagPart;
    printf("Enter coefficients a, b and c: ");
    scanf("%lf %lf %lf", &a, &b, &c);

    discriminant = (b * b) - (4 * a * c);

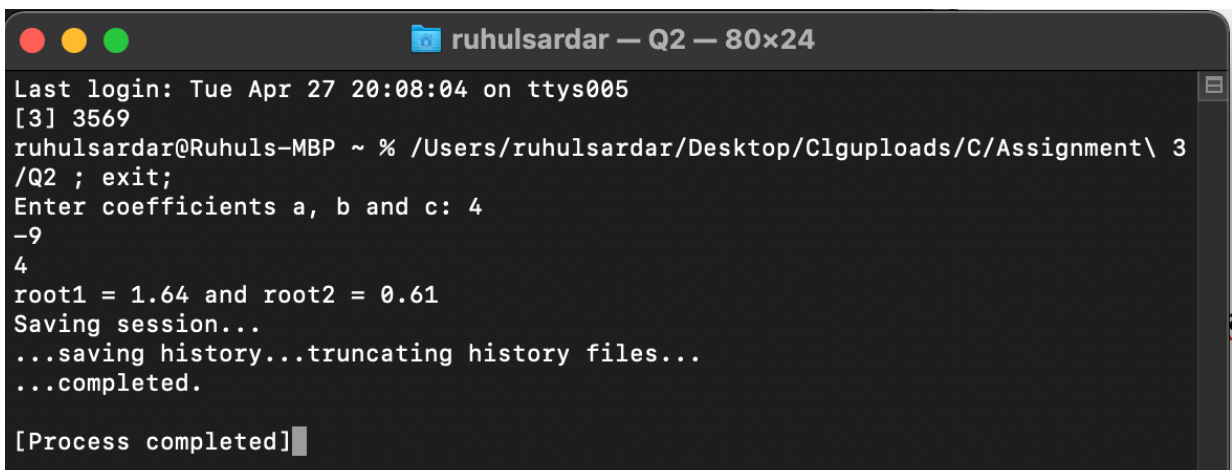
    // condition for real and different roots
    if (discriminant > 0) {
        root1 = (-b + sqrt(discriminant)) / (2 * a);
        root2 = (-b - sqrt(discriminant)) / (2 * a);
        printf("root1 = %.2lf and root2 = %.2lf\n", root1, root2);
    }

    // condition for real and equal roots
    else if (discriminant == 0) {
        root1 = root2 = -b / (2 * a);
        printf("root1 = root2 = %.2lf\n", root1);
    }

    // if roots are not real
    else {
        realPart = -b / (2 * a);
        imagPart = sqrt(-discriminant) / (2 * a);
        printf("root1 = %.2lf+%.2lfi and root2 = %.2f-%.2fi\n", realPart, imagPart,
realPart, imagPart);
    }

    return 0;
}
```

### Output:



```
ruhulsardar — Q2 — 80x24
Last login: Tue Apr 27 20:08:04 on ttys005
[3] 3569
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3
/Q2 ; exit;
Enter coefficients a, b and c: 4
-9
4
root1 = 1.64 and root2 = 0.61
Saving session...
...saving history...truncating history files...
...completed.

[Process completed]
```

**Q3. WACP to determine whether the character entered is a capital, small case letter, a digit or a special symbol (using else if ladder).**

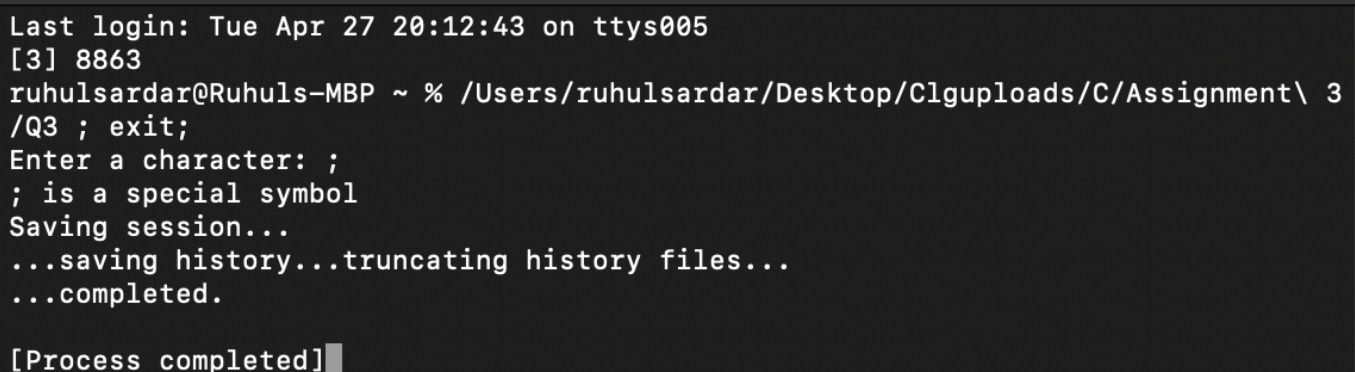
```
#include<stdio.h>

int main(){
    char ch;
    printf("Enter a character: ");
    scanf("%c", &ch);

    if (ch >= 65 && ch <=90)
    {
        printf("%c is a capital case letter\n", ch);
    }
    else if (ch >= 97 && ch <= 122)
    {
        printf("%c is a small case letter\n", ch);
    }
    else if (ch >= 48 && ch <= 57)
    {
        printf("%c is a number\n", ch);
    }
    else if((ch>=0 && ch<=47) || (ch>=58&& ch<=64) || (ch>=91 && ch<=96) || (ch>=123 &&
ch<=127))
    {
        printf("%c is a special symbol\n", ch);
    }

    return 0;
}
```

**Output:**



The screenshot shows a terminal window titled "ruhulsardar — Q3 — 80x24". The terminal output is as follows:

```
Last login: Tue Apr 27 20:12:43 on ttys005
[3] 8863
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3
/Q3 ; exit;
Enter a character: ;
; is a special symbol
Saving session...
...saving history...truncating history files...
...completed.

[Process completed]
```

**Q4. WACP to add, subtract, multiply and divide two numbers using switch case.**

```
#include<stdio.h>

int main(){
    int a,b,ch;

    printf("Enter the 1st number: ");
    scanf("%d", &a);
    printf("\nEnter the 2nd number: ");
    scanf("%d", &b);

    printf("\nChoose among 1 for addition , 2 for subtraction , 3 for multiplication , 4 for division : ");
    scanf("%d", &ch);

    switch(ch)
    {
        case 1 :
            printf("%d\n", a+b);
            break;

        case 2 :
            printf("%d\n", a-b);
            break;

        case 3 :
            printf("%d\n", a*b);
            break;

        case 4 :
```

```
printf("%d\n", a/b);

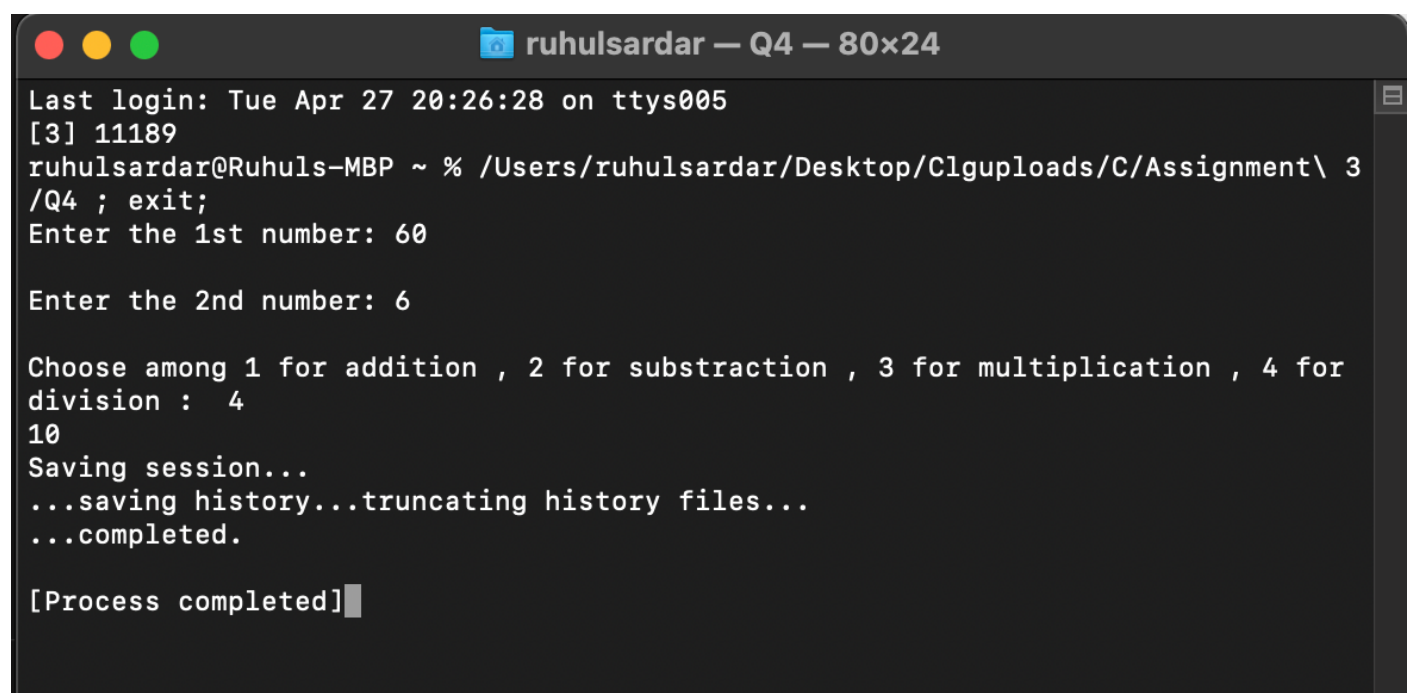
break;

}

return 0;

}
```

### Output:

A screenshot of a macOS terminal window titled "ruhulsardar — Q4 — 80x24". The terminal shows the output of a C program. It starts with the login message "Last login: Tue Apr 27 20:26:28 on ttys005" and the prompt "[3] 11189". The user's current directory is "/Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3 /Q4". The program prompts for the first number, which is entered as "60", and the second number, which is entered as "6". It then prompts for an operation choice (1 for addition, 2 for subtraction, 3 for multiplication, 4 for division), and "4" is entered. The program calculates the result "10" and displays it. It then shows messages "Saving session...", "...saving history...truncating history files...", and "...completed.". The session ends with "[Process completed]".

```
ruhulsardar — Q4 — 80x24
Last login: Tue Apr 27 20:26:28 on ttys005
[3] 11189
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3
/Q4 ; exit;
Enter the 1st number: 60

Enter the 2nd number: 6

Choose among 1 for addition , 2 for subtraction , 3 for multiplication , 4 for
division : 4
10
Saving session...
...saving history...truncating history files...
...completed.

[Process completed]
```

**Q5. Any year is entered through keyboard. WACP to determine whether the year is a leap year or not (using conditional operators).**

```
#include<stdio.h>

int main()
{
    int year;

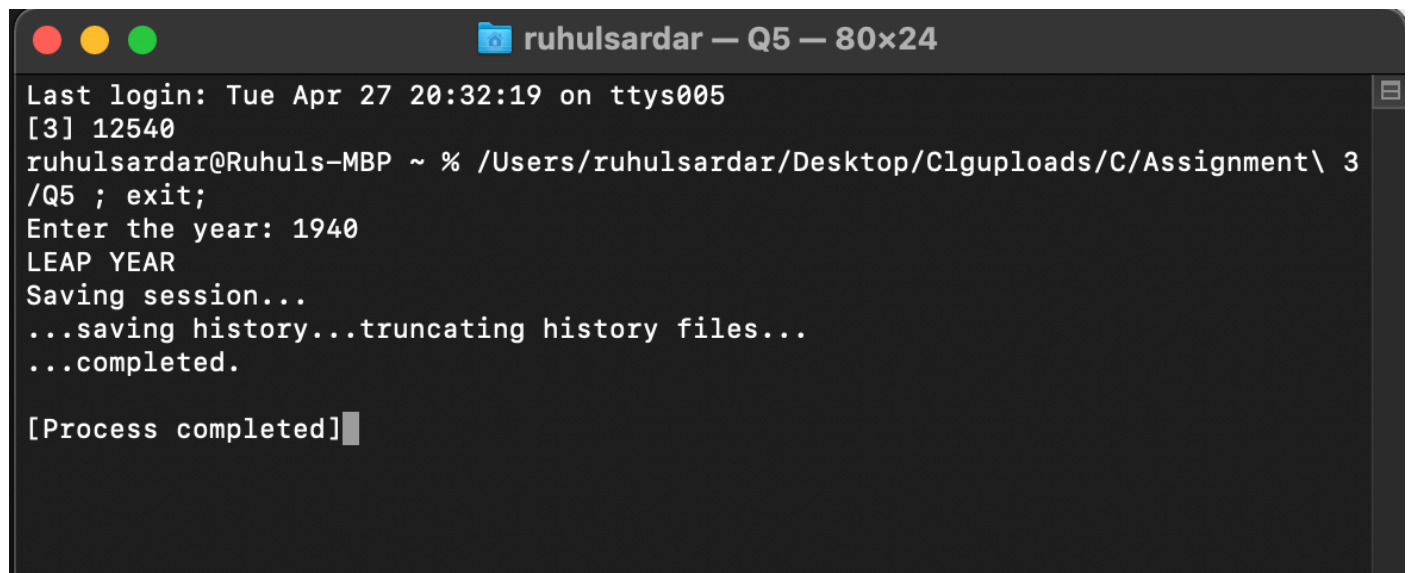
    printf("Enter the year: ");

    scanf("%d", &year);

    (year%4==0 && year%100!=0) ? (printf("LEAP YEAR\n")) : ((year%400 ==0 ) ? (printf("LEAP YEAR\n")) : (printf("COMMON YEAR\n")));

    return 0;
}
```

**Output:**

A screenshot of a macOS terminal window titled "ruhulsardar — Q5 — 80x24". The terminal shows the following text: "Last login: Tue Apr 27 20:32:19 on ttys005", "[3] 12540", "ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3 /Q5 ; exit;", "Enter the year: 1940", "LEAP YEAR", "Saving session...", "...saving history...truncating history files...", "...completed.", and "[Process completed]". The terminal has a dark background and a light-colored cursor.

```
Last login: Tue Apr 27 20:32:19 on ttys005
[3] 12540
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3
/Q5 ; exit;
Enter the year: 1940
LEAP YEAR
Saving session...
...saving history...truncating history files...
...completed.

[Process completed]
```

**Q6. Find greatest of three numbers (using ternary operator).**

```
#include<stdio.h>

int main()
{
    int a,b,c,big;

    printf("Enter three numbers : ");

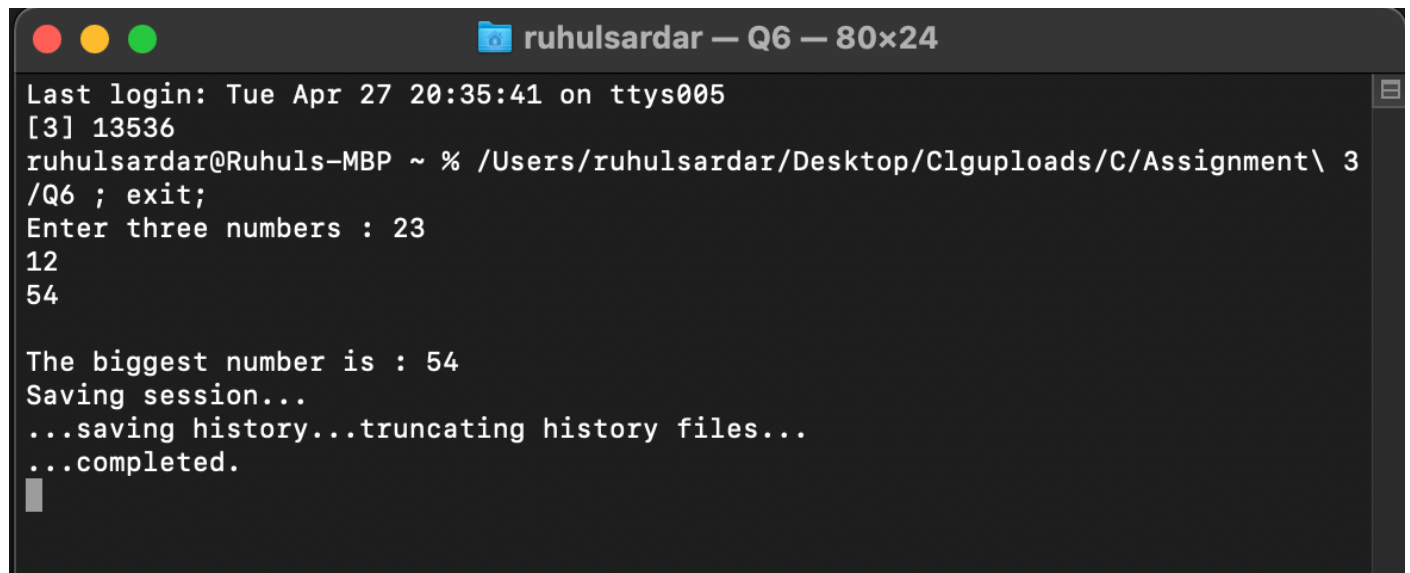
    scanf("%d %d %d", &a, &b, &c) ;

    big = (a > b) ? ((a > c) ? a: c):((b > c) ? b:c);

    printf("\nThe biggest number is : %d\n", big) ;

    return 0;
}
```

**Output:**

A terminal window titled "ruhulsardar — Q6 — 80x24" with standard macOS window controls (red, yellow, green buttons). The terminal shows the following text:

```
Last login: Tue Apr 27 20:35:41 on ttys005
[3] 13536
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 3
/Q6 ; exit;
Enter three numbers : 23
12
54

The biggest number is : 54
Saving session...
...saving history...truncating history files...
...completed.
```

